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(72) Inventors:
 • **Sakamoto, Hitoshi, Mitsubishi Heavy Ind., Ltd.**
Kanazawa-ku, Yokohama, Kanagawa-ken (JP)
 • **Yahata, Naoki, Mitsubishi Heavy Ind., Ltd.**
Takasago, Hyogo-ken (JP)

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(74) Representative: **HOFFMANN - EITLE**
Patent- und Rechtsanwälte
Arabellastrasse 4
81925 München (DE)

(71) Applicant: **MITSUBISHI HEAVY INDUSTRIES,**
LTD.
Tokyo 100 (JP)

(54) **Copper film vapor phase deposition method and apparatus**

(57) A copper film vapor phase deposition method includes the steps of exposing high-purity copper to a plasma of a gas containing chlorine gas to etch the high-purity copper, thereby generating active Cu_xCl_y , where in x is 1 to 3, y is 1 to 3, gas, and forming a copper film by transporting the Cu_xCl_y gas onto the surface of a sub-

strate to be processed. By using inexpensive high-purity copper and inexpensive chlorine, hydrogen chloride, or chlorine and hydrogen as source gases, a copper film containing no residual impurity such as carbon and having high film quality can be formed with high reproducibility.

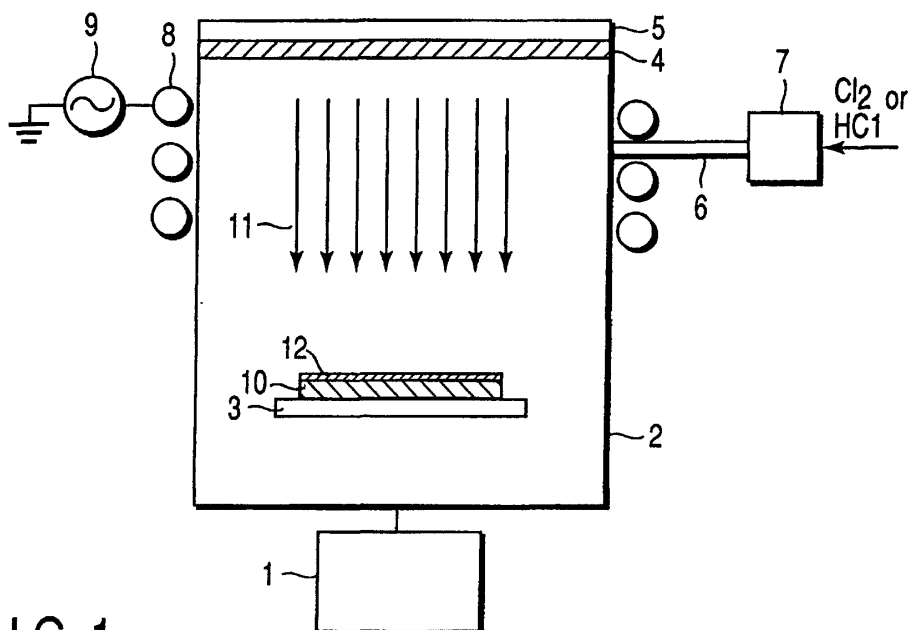


FIG. 1



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EUROPEAN SEARCH REPORT

Application Number
EP 02 01 3994

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Place of search THE HAGUE		Date of completion of the search 17 November 2003	Examiner Ekhuil, H
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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